



IEEE

**Ottawa
Section**



**Seminar by IEEE Ottawa Section, PELS, RS-PEL, PES, Education Activities, and
Algonquin College IEEE Student Branch.**

The IEEE Ottawa Section is inviting all interested IEEE members and nonmembers to a seminar

Si, SiC, and GaN Power Semiconductor Devices – What to Choose?

By

Dr. Tanya K. Gachovska, Solantro Semiconductor Corp., Ottawa

DATE: September 28th 2017 (to be confirmed)

TIME: Refreshments, Registration and Networking: 18:00; Seminar: 18:30 – 20:00.

PLACE: [Algonquin College, T-Building](#), Room T129, 1385 Woodroffe Ave., Ottawa.

PARKING: No fee after 5 p.m. at the Parking Lots 8 & 9. Please respect restricted areas.

Abstract - Wide bandgap semiconductors such as SiC and GaN have drawn a lot of attention in power applications due to their superior material properties such as high critical electric field resulting in a minimum of 10 times higher breakdown voltage or a 100 times smaller on-resistance than Si. Additionally, SiC has a thermal conductivity which is approximately three times higher than Si. These unique properties of SiC and GaN materials have made them promising candidates for future high power, high frequency semiconductor devices.

In this talk, the speaker will present important material properties of Si, SiC and GaN and two different groups of figures of merit (FOM) used for comparison the performances of power semiconductor technologies and devices. The first group includes FOMs that are functions of the intrinsic material parameters and used to compare technologies or materials. The second group includes FOMs that are functions of the devices parameters and used to compare the devices performance in a power system. A comparison of Si, SiC and GaN devices from the same classes available in the market using different FOMs will also be presented.

Speaker's Bio

Tanya Kirilova Gachovska received her B.Sc., M.Eng., and Ph.D. Degrees, all in Electrical Engineering, from the University of Ruse, Bulgaria, in 1994, 1995 and 2003, respectively. She earned her second Ph.D. Degree in Electrical Engineering (Power Electronics), at the University of Nebraska-Lincoln (UNL), Lincoln, USA in 2012. Her Ph.D. thesis was "Modeling of Power Semiconductor Devices". She worked as an Assistant Professor at the University of Ruse from 1999 to 2003. She conducted research from 2004 to 2006 and taught for a semester in 2006 at McGill University in Montreal. She worked as a Postdoctoral Research Scientist in the area of Pulsed Electric Fields at UNL from 2012 to 2013. During her Ph.D. Studies at UNL, she taught various courses and labs, and continued a collaboration in Pulsed Electric Fields research with McGill University, University of Ruse, University of Djali Liabes, Sidi Bel Abbes, Algeria and École Nationale Supérieure Agronomique, El Harrach, Algeria. She joined Solantro Semiconductor, Corp., Canadian Office in Ottawa in 2013. Dr. Gachovska authored or co-authored more than 30 technical papers and conference presentations, two books, and holds a world patent in Pulsed Electric Fields.

Admission:

Free. Registration required.

Please register by e-mail contacting: tgachovsha@solantro.com

